

AF 2814

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

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TC 2800 MAIL ROOM

Appln. Of: HIROAKI YOKOYAMA  
Serial No.: 08/992,767  
Filed: December 17, 1997  
For: CONTACT STRUCTURE IN SEMICONDUCTOR...  
Group: 2814  
Examiner: D. Wille  
DOCKET:  
NEC-19654 CON

The Assistant Commissioner of Patents  
Washington, D.C. 20231

AMENDMENT E

Dear Sir:

This amendment is being filed in response to the Final Action mailed June 1, 2001.

In the Action, the Examiner maintains the rejection of the claims as obvious from Tsoi et al in view of Roberts et al, McDavid, Miller et al and Kim et al.

The deficiencies of the primary reference, Tsoi et al, and the secondary references Roberts et al, McDavid, Miller et al have been discussed extensively in the earlier prosecution, and in the case of Roberts et al, McDavid, and Miller et al, in the Appeal Brief previously submitted in this case, all of which comments are incorporated by reference.

In the Final Action, the Examiner characterizes Kim et al as "only used to show the use of tapering of the upper part. The rest of Kim et al, which is associated with the particular formation technique shown, is not relied upon." In other words, the Examiner appears to have cherry-picked one feature out of Kim et al, and to have taken Kim et al out of context. Kim et al

taper etches the upper portions of the openings specifically to facilitate elimination of by-products. See, for example, the paragraph bridging columns 4-5 of Kim et al, which it is noted:

"The tapered opening allows the by-products (reference numerals 26 and 27) to be easily removed by RAI sputtering, which is performed to eliminate the by-products (see Fig. 2E), and improves the step coverage of a conductive layer in a succeeding step of filling the opening with conductive material to form a conductive layer."

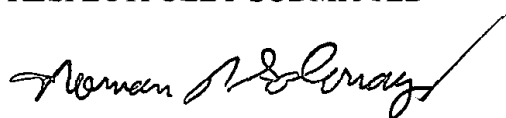
Thus, Kim et al nowhere contemplates the problems associated with forming large and small diameter contact holes in a substrate addressed by the instant application.

Thus, no combination of the art applied by the Examiner reasonably could be said to achieve or render obvious any of claims 11-28.

Since the foregoing amendment makes no claim changes, it should be entered as a matter of right.

In the event there are any fee deficiencies or additional fees are payable, please charge them (or credit any overpayment) to our deposit account number 08-1391.

RESPECTFULLY SUBMITTED



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**CERTIFICATE OF MAILING**

I hereby certify that this correspondence is being deposited with the United States Postal Service as First Class Mail in an envelope addressed to: Assistant Commissioner of Patents and Trademarks, Washington, D.C. 20231 on August 31, 2001, at Manchester, New Hampshire.

By 